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10/056,546	01/24/2002	Sankar Basu	YOR920020018	8796

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EXAMINER	
DEBROW, JAMES J	
ART UNIT	**PAPER NUMBER**
2176	

MAIL DATE	DELIVERY MODE
07/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/056,546	BASU ET AL.	
	Examiner	Art Unit	
	James J. Debrow	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: Appeal Brief filed 21 Feb. 2007.

2. Claims 1-28 are pending in this case. Claims 1, 16 and 22 are independent claims.

Reopening of Prosecution After Appeal Brief or Reply Brief

3. In view of the Appeal Brief filed on 21 Feb. 2007, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Doug Hutton
Primary Examiner
Technology Center 2100

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 3 and 18** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter *"explicit models"*, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. **Claims 4 and 19** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter *"implicit models"*, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claims 3 and 18** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recite *"deterministically or probabilistically is based on explicit models"* in which the Examiner determines to be indefinite in this context as the specification offers no clarity as to it's meaning.

9. **Claims 4 and 19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recite *"deterministically or probabilistically is based on implicit models"* in which the Examiner determines to be indefinite in this context as the specification offers no clarity as to it's meaning.

Claim Rejections - 35 USC § 112

10. **Claims 14 and 15** recites the limitation *"the method of claim 2, wherein the models....."* . Claim 2 does not recite *"models"*. There is insufficient antecedent basis for this limitation in the claim. The Examiner concludes Applicant meant for claims to be dependency of claim 13 and will be examined accordingly.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. **Claims 1, 6, 9, 10, 12, 16, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler et al. (Patent No.: US 6,804,684, B2; Filed May 7, 2001) (hereinafter "Stubler") in view of LeBrun et al. (Patent No.: 6,043,819; Filed Jul. 01, 1997) (hereinafter "LeBrun).**

In regards to independent claims 1, 16 and 22, Stubler discloses *method for generating persistent annotations of multimedia content, comprising one or more repetitions of the following steps:*

actively selecting examples of multimedia content to be annotated by a user (fig. 2, fig. 6-7, col. 3 line 46 – col. 4 line 12, col. 8 lines 18-23, and col. 9 line 65 – col. 10 line 18; col. 11, lines 3-35; Stubler discloses unlabeled image regions being presented

to the user so that the user can apply a caption or label to all of the regions simultaneously. Stubler also disclose automatically generating one or more captions or labels for the acquired image automatically without any user intervention.).

accepting input annotations from said user for said selected examples (fig. 2, col. 3 line 46 – col. 4 line 12, and col. 8 lines 18-55; Stubler discloses unlabeled image regions being presented to the user so that the user can apply a caption or label to all of the regions simultaneously.).

propagating said input annotations to other instances of multimedia content (fig. 2; col. 3 line 46 – col. 4 line 12; col. 8 lines 18-55; col. 2 line 59 – col. 3 line 10; Stubler discloses unlabeled image regions being presented to the user so that the user can apply a caption or label to all of the regions simultaneously.).

storing said input annotations and said propagated annotations (col. 8 lines 18-55).

Stubler does not expressly disclose *actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result such that only those examples which are most ambiguous are selected.*

However LeBrun teaches *actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result such that only*

those examples which are most ambiguous are selected (col. 3, lines 49-51; col. 10, lines 4-8; col. 18, lines 16-20; col. 21, lines 20-24; LeBrun teaches a database of graphic document images which are automatically identified *(annotated)* by an image character reader. Images not automatically identified *(annotated)* by the image character reader are queued for manual identification/classification by human operators looking sequentially at a screen or queue of images and keying in the identification.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler with LeBrun for the benefit of speeding up the process of document *(multimedia annotations)* processing so that a higher volume of transactions can be processed, and reduce the number of errors which are considered to be inherent in a document processing *(multimedia annotations)* operation (col. 3, lines 14-23).

In regards to dependent claims 6 and 21, Stubler discloses *wherein the multimedia content comprises one or more types selected from the group consisting of: images, audio, video, graphics, text, multimedia, Web pages, time series data, surveillance data, sensor data, relational data, and XML data* (col. 3 line 46 – col. 4 line 12; Stubler discloses images type multimedia.).

In regards to dependent claim 9, Stubler discloses *the method of claim 1, wherein the process of creating input annotations by the user involves multimodal*

interaction with the user using graphical, textual, and/or speech interface (col. 9, line 65-col. 10, line 18; Stubler disclose an interactive user verification stage in which the user may select and/or edit captions and label.).

In regards to dependent claim 10, Stubler discloses *the method of claim 1, wherein the input annotations are created by means of steps selected from the group consisting of: creating new annotations, deleting existing annotations, rejecting proposed annotations, and modifying annotations* (col. 9, line 65-col. 10, line 18; Stubler disclose an interactive user verification stage in which the user may select and/or edit captions and label.).

In regards to dependent claim 12, Stubler discloses *the method of claim 9, wherein the multimodal interaction involves speech recognition, gaze detection, finger pointing, expression detection, and/or effective computing methods for sensing a user's state* (col. 5, lines 59-63; col. 6, line 55-62; col. 9 line 49 – col. 10 line 18).

Note

13. It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

14. Claims 2-5 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler in view of LeBrun further in view of Lennon et al. (Patent No.: 6,718,063 B1; Filed Dec. 10, 1999) (hereinafter "Lennon").

In regards to dependent claims 2 and 17, Stubler discloses *wherein the step of actively selecting is performed using a selection technique selected from deterministic* (col. 4 line 64 – col. 5 line 19).

Stubler in view of LeBrun does not expressly disclose *actively selecting is performed using a selection technique of probabilistic.*

However Lennon teaches *actively selecting is performed using a selection technique of probabilistic* (col. 3, lines 19-35; Lennon teaches using a probabilistic method for correctly assigning labels to regions of images.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lennon for the benefit of using a probabilistic method, which results in each assigned label for a region having an associated probability or likelihood of the label being correctly assigned (col. 3, lines 23-27).

In regards to dependent claims 3 and 18, Stubler discloses *wherein the step of actively selecting, which is performed deterministically or probabilistically, is based on explicit models and feature proximity/similarity measures, and returns one or more*

examples of multimedia content to be annotated (fig. 2 and col. 8 lines 18-55).

In regards to dependent claims 4 and 19, Stubler discloses *wherein the step of actively selecting, which is performed deterministically or probabilistically, is based on implicit models and feature proximity/similarity measures, and returns one or more examples of multimedia content to be annotated* (fig. 2 and col. 8 lines 18-55).

In regards to dependent claims 5 and 20, Stubler in view of LeBrun does not expressly disclose *wherein an optimization criterion for active selection includes one or more criteria selected from the group consisting of: information measures and confidence.*

However Lennon teaches *wherein an optimization criterion for active selection includes one or more criteria selected from the group consisting of: information measures and confidence* (Abstract; col. 7, lines 41-45; Lennon teaches a probability value expressing the confidence level of the label being correctly assigned.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lennon for the benefit of using a probabilistic method, which results in each assigned label for a region having an associated probability or likelihood of the label being correctly assigned (col. 3, lines 23-27).

Note

15. It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

16. **Claims 7, 8, 11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler in view of LeBrun further in view of Lipson et al. (Patent No.: 5,963,670; Filed: Feb. 12, 1996) (hereinafter "Lipson").**

In regards to dependent claim 7, Stubler in view of LeBrun does not expressly disclose *the method of claim I, wherein the input annotations are created by a user with reference to a vocabulary.*

However Lipson teaches *the method of claim I, wherein the input annotations are created by a user with reference to a vocabulary* (col. 9, lines 23-35; Lipson teaches a rich vocabulary to differentiate between many classes of images.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

In regards to dependent claim 8, Stubler in view of LeBrun does not expressly disclose *the method of claim 7, wherein the vocabulary contains one or more items selected from the group consisting of: terms, concepts, labels, and annotations.*

However Lipson teaches *the method of claim 7, wherein the vocabulary contains one or more items selected from the group consisting of: terms, concepts, labels, and annotations* (col. 9, lines 23-42; Lipson teaches a rich vocabulary to differentiate between many classes of images. It has been established and is commonly known that vocabularies typically contain *terms and concepts.*).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

In regards to dependent claim 11, Stubler in view of LeBrun does not expressly disclose *the method of claim 7, wherein the vocabulary is adaptively or dynamically organized and/or limited by the system or the user.*

However Lipson teaches *the method of claim 7, wherein the vocabulary is adaptively or dynamically organized and/or limited by the system or the user* (col. 9, lines 23-35.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of

providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

In regards to dependent claim 13, Stubler discloses *the method of claim 1, wherein the determination of the propagation of annotations is made deterministically or probabilistically* (col. 4 line 64 – col. 5 line 19)

Stubler in view of LeBrun does not expressly disclose *the use of models for each annotation or for joint annotations.*

However Lipson teaches *the use of models for each annotation or for joint annotations* (col. 2, lines 56-59; Lipson teaches an image model for classifying or detecting images.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

In regards to dependent claim 14, Stubler in view of LeBrun does not expressly disclose *the method of claim 2, wherein the models are created or learned automatically or semi-automatically and/or are updated adaptively from interaction with the user.*

However Lipson teaches *wherein the models are created or learned automatically or semi-automatically and/or are updated adaptively from interaction with*

the user (col. 9, line 37-col. 10, line 22; Lipson teaches a method for generating a class model.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

In regards to dependent claim 15, Stubler in view of LeBrun does not expressly disclose *the method of claim 2, wherein the models are based on nearest neighbor voting or variants, parametric or statistical models, expert systems, rule-based systems, or hybrid techniques.*

However Lipson teaches *the use of models for each annotation or for joint annotations* (col. 2, lines 56-59; col. 13, line 2-col. 14, line18).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Lipson for the benefit of providing a class model, which can be used to detect images of that class in a database (col. 2, lines 39-41).

Note

17. It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon

for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

18. **Claims 23, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler and LeBrun in view of Neal et al. (Patent No.: US 6,697,799 B1; Effective Filling Date: Sep. 10, 1999) (hereinafter "Neal").**

In regards to dependent claims 23, 25 and 27, Stubler in view of LeBrun does not expressly disclose *wherein the at least one criterion includes an ambiguity level of the selected examples.*

However Neal teaches *wherein the at least one criterion includes an ambiguity level of the selected examples* (col. 11, lines 1-47; Neal teaches a classification confidence score which determines the level of confidence in which a category is likely to be correct during classification. If the item has a high confidence, then it can be classified directly. If the confidence level is low, then the results can be sent to the user interface for review and selection by the operator. Using the broadest reasonable interpretation, the Examiner has determined that the "confidence level" as taught by Neal is analogous with the "ambiguity level" of the current invention.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Neal for the benefit of comparing confidence scores of items for all selected classifications and classifying the items based on confidence score comparison (col. 2, lines 36-42).

Note

19. It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

20. **Claims 24, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubler and LeBrun in view of Neal, further in view of Toyama (Patent No.: US 6,816,847 B1; Filling Date: Sep. 23, 1999).**

In regards to dependent claims 24, 26 and 28, Stubler in view of LeBrun does not expressly disclose *wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space.*

Neal teaches *wherein the at least one criterion includes an ambiguity level of the selected examples* (col. 11, lines 1-47; Neal teaches a classification confidence score which determines the level of confidence in which a category is likely to be correct during classification. If the item has a high confidence, then it can be classified directly. If the confidence level is low the results can be sent to the user interface for review and

selection by the operator. Using the broadest reasonable interpretation, the Examiner has determined that the "confidence level" as taught by Neal is analogous with the "ambiguity level" of the current invention.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler and LeBrun with Neal for the benefit of comparing confidence scores of items for all selected classifications and classifying the items based on confidence score comparison (col. 2, lines 36-42).

Toyama teaches *a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space* (col. 5, line 47-col. 6, line 50; Toyama teaches a SVM classifier by identifying a hyperplane that separates a set of positive and negatives examples with a maximum margin. Toyama further teaches, the quality of the learned classifiers for aesthetic image judgment can be enhanced by inputting to the feature selection procedures that are useful for distinguishing different aesthetic among images. Using the broadest interpretation, the Examiner concludes at the time of the invention, one of ordinary skill of the art could modify Neal's teaching with Toyama teaching of enhancing the learned qualifier in such a way that wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space.).

Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to combine Stubler, LeBrun and Neal with Toyama for the benefit of generating a set of images for input into a SVM classifier (col. 1, lines 57-64).

Note

21. It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

Response to Arguments

22. Applicant's arguments, see Appeal Brief, filed 21 Feb. 2007, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Stubler, LeBrun, Lennon, Lipson, Neal and Toyama.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James J. Debrow whose telephone number is 571-272-5768. The examiner can normally be reached on 8:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 571-272-4136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAMES DEBROW
EXAMINER
ART UNIT 2176

William L. Bashore
WILLIAM BASHORE
PRIMARY EXAMINER